



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,182	02/11/2002	Tatsuya Konagaya	Q68389	2952

7590 02/09/2005
SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

PUNNOOSE, ROY M

ART UNIT PAPER NUMBER

2877

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,182

Applicant(s)

KONAGAYA, TATSUYA

Examiner

Roy M. Punnoose

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 12, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of Applicant's amendment received on November 12, 2004 is acknowledged.

Applicant's arguments filed November 12, 2004 have been fully considered but they are not persuasive.

The Examiner's response to applicant's argument is detailed below. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Response to Applicant's Arguments

2. In the "Remarks" section, applicant argues that claims 1 and 6 recite the limitation of "inspection image which includes marks deposited correspondingly to positions of said respective light emitting elements" which is not disclosed or suggested by Asakura. Applicant's argument is not persuasive because this newly introduced feature in the amended claims 1 and 6 is not disclosed in the specification and therefore it is new matter.

3. With regard to claim 13, Applicant argues that the Examiner contends that "automatically judging whether light source is defective or not" is old and well known without providing prior art teaching or supporting evidence. Applicant's argument is not persuasive because the Examiner is including prior art teaching (JP406113078A) of inspection method comprising "automatic judgment" with this office action.

4. With regard to claims 2, 4, 5, 7, 10-12, 14, 16, 17, 19 and 21-23, applicant submits that said claims are patentable at least by virtue of their respective dependencies. Applicant's argument is not persuasive because the independent claims have not overcome the reasons of rejection stated in the previous office action and also in the numbered paragraphs 2 and 3 above.

Additionally, with regard to claims 10 and 21, the applicant argues that the Examiner contends that “one skilled in the art would have applied the inspection method of Asakura to the infrared light emitting elements” without providing prior art teaching or supporting evidence. Applicant’s argument is not persuasive because, in view of Asakura’s teaching of the use of one type of light emitting elements, visible light emitting elements in this instance, it would have been obvious to one of ordinary skills in the art at the time the invention was made to further broaden the spectrum to include infrared (IR) light emitting elements also to the group of light emitting elements to be inspected so that said method can inspect a broader range of light emitting elements in order to improve the efficiency and adaptability of said method.

5. Applicant’s argument on the “detachable diffusion member” of claims 2, 7, 14 and 19 are not persuasive because in view of prior art Thornton (US_5,847,754) as detailed below, it would have been obvious to one of ordinary skills in the art at the time the invention was made to remove the detachable diffusion member as it would have “blurred” the image of individual light emitting element and made the inspection impossible. Because the light emitting elements are in close proximity per applicant’s disclosure, it is all the more obvious that a diffuser cannot be used during inspection as it would blur and blend the image of all light emitting elements in close proximity into one single blob of light instead of a more focused image of individual light emitting elements. Therefore it would be counter-intuitive for one skilled in the art to leave or place a detachable diffusion member in an optical path, and not remove it, during or before inspection of an object under test or observation because the diffusion member would blur the image of the object and would not provide a sharp image that is necessary for judging the quality of said object.

Art Unit: 2877

6. With regard to claims 3, 8-9, 15 and 20, applicant submits that said claims are patentable at least by virtue of their respective dependencies. Applicant's argument is not persuasive because the independent claims have not overcome the reasons of rejection stated in the previous office action and also in the numbered paragraphs 2 and 3 above.

7. Finally, with regard to the image-forming lens recited in the claims, the applicant argues that the Examiner contends that the feature is well known in the art without providing prior art teaching or supporting evidence. Applicant's argument is not persuasive because, the Examiner is including prior art teaching (JP02000136982A) of image-forming lens used for inspecting light emissions from array elements.

8. The applicant's arguments with respect to claims 13 and 18 presented in the 4th paragraph on page 13 is confusing because the image-forming lens is not recited in claims 13 and 18. (It is assumed that the applicant is referring to the 3rd paragraph on page 13.) Clarification is requested.

Drawings

9. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore:

- a) The "inspection image that includes marks deposited correspondingly to positions of said respective light emitting elements" must be shown or the feature(s) canceled from claims 1 and 6; and,
- b) The photoelectric converter receives light emitted from the light source after said light is reflected by the original must be shown or the feature(s) canceled from claims 28-31.

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 28-31 recites that the photoelectric converter receives light emitted from the light source after said light is reflected by the original. It is not clear from the specification or the drawings how light reflected from the original reaches the photoelectric converter because

the original is in the optical path between the light source and the photoelectric converter.

Appropriate correction is required.

Claim Objections

12. The amendment filed on November 12, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

“... inspection image which includes marks deposited correspondingly to positions of said respective light emitting elements” (see claims 1, 2 and 19).

Applicant is required to cancel the new matter in the reply to this Office Action.

13. Claims 4 and 16 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 3 and 15 are directed to an inspection method, whereas dependent claims 4 and 16 are directed to a method, but lacks any method step limitation(s) to further limit its parent claims, claims 3 and 15, and merely recite a device, an LED in this instance. Accordingly, claims 4 and 16 have not been given any patentable weight.

14. Claims 5 and 17 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 4 and 16 are directed to an inspection method, whereas dependent claims 5 and 17 are directed to a method, but lacks any method step

limitation(s) to further limit its parent claims, claims 4 and 16, and merely recites a device, an area CCD in this instance. Accordingly, claims 5 and 17 have not been given any patentable weight.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 6, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura (JP 408137413A) in view of Abe et al (JP406113078A).

17. Claims 1, 6, 13 and 18 are rejected because:

A. Asakura discloses an inspection method for light sources comprising receiving the light from each light emitting elements 2, 2a, 3, 3a, 4, 4a, with a photoelectric converter, wherein the light emitting elements are LEDs, the light being received without passing through an original, converting the received light into a signal, photoelectric displaying a light-emission state of each of said light emitting elements and on the basis of said photoelectric signal, inspecting said light source by watching said light-emission states of said light emitting elements (see Constitution). Asakura's method is for inspecting an array of light emitting diodes of a semiconductor light emitting element display device. Asakura does not disclose that the inspecting method for light sources is for inspecting the light sources of an image reader, or Asakura does not disclose an automatic judging

Art Unit: 2877

- means for efficiently detecting any defect of the light emitting elements to provide a method that will make the detection process easier, more efficient and accurate.
- B. However, in view of Asakura's teaching of inspecting an array of light emitting diodes of a semiconductor light emitting element display device, it would have been obvious to one of ordinary skills in the art at the time the invention was made to adapt Asakura's LED light source inspection method for inspecting any of a variety of different types of light sources so that an array of light sources can easily be inspected for any defect in any individual light source with ease and efficiency and without any strain to the human eye in a manufacturing environment.
- C. With regard to the automatic judging means of claims 13 and 18, Abe et al discloses automatic judgment means (see abstract).
- D. In view of Abe's teachings, it would have been obvious to one of ordinary skills in the art at the time the invention was made to have a judging means in an inspection method for inspecting any defect in a light source with ease and efficiency and without any strain to the human eye in a manufacturing environment.
18. Claims 2-5, 7-12, 14-17 and 19-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura (JP 408137413A) in view of Abe et al (JP406113078A) and further in view of Yamaura (JP02000136982A) and Thornton (US_5,847,754).
19. Claims 2-5, 7-12, 14-17 and 19-31 are rejected because:
- A. Asakura and Abe teaches all claim limitations except for the explicit disclosure that infrared (IR) light emitting elements are inspected, or an image-forming lens is positioned to image the light emitting elements and provide the image formed by the

image-forming lens to a CCD camera that is connected to a display/monitor, or of a detachable diffusing member in a device for inspecting the light sources for efficiently detecting any defect of the light emitting elements to provide a method that will make the detection process easier, efficient and accurate.

B. Yamaura discloses an image-forming lens 3 that is positioned to image the light emitting elements 1b and provide the image formed by the image-forming lens to a CCD imaging device 4 that is connected to a display/monitor 5 (see abstract and Figure 1) for inspecting the light sources for efficiently detecting any defect of the light emitting elements to provide a method that will make the detection process easier, more efficient and accurate.

C. In view of Yamaura's teaching of the image-forming lens and CCD imaging device in an inspection system for inspecting an array of light emitting elements, it would have been obvious to one of ordinary skills in the art at the time the invention was made to incorporate Yamaura's teachings into Asakura's method and system due to the fact that such a combination would provide a method and system for easy inspection of defect in any individual light source more efficiently and accurately without any strain to the human eye in a manufacturing environment.

D. With regard to inspection of IR light emitting elements of claims 10 and 21 in view of Asakura's teaching of the inspection of one type of light emitting element, light emitting elements in the visible range in this instance, it would have been obvious to one of ordinary skills in the art at the time the invention was made to include/incorporate IR light emitting elements also into Asakura's LED light source inspection method due to

the fact that an array of light sources with a broader spectral content can easily and more accurately inspected for any defect in a manufacturing environment.

- E. With regard to claims 2, 7, 14 and 19, Thornton discloses a device comprising a detachable diffusing member for the purpose of providing uniform light illumination onto a film so as to obtain a more accurate image from said film. Thus prior art Thornton provide evidence that removable diffusing elements are known to be used in scanner and similar devices.
- F. In view of Thornton's teaching, it would have been obvious to one of ordinary skills in the art at the time the invention was made to include/incorporate a detachable diffusing member into Asakura's LED light source inspection device due to the fact that such a combination would provide a more accurate image during normal operation of the device, and remove the diffuser when not needed for any reason. Additionally, it should be noted that the detachable diffusing member does not positively contribute in any way or manner in the inspection of the light sources. In fact, detachable diffusing member has to be removed for inspecting the light sources. Additionally, it is well known in the art, as evidenced by Thornton, that image reading devices comprise detachable diffusing elements for dispersing and uniformly distributing light from a plurality of light sources to a substrate placed adjacent to the diffusing member. It is also obvious to one of ordinary skill in the art at the time the invention was made that it is preferable to remove the diffusion member from the optical axis between the light sources and the photoelectric converter so that a sharper image of the output of the light sources can be directly imaged by the photoelectric converter, without any blur that will be produced by

a diffusing element, for the purpose of inspecting the light sources so that any defect(s) in the light sources can easily, efficiently and more accurately be detected.

Priority

20. In the previous office action the Examiner erroneously indicated on the PTOL-326 form that all certified copies of the foreign applications have been received. Only one of the two certified copies of the foreign applications has been received as indicated below.

21. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 28/01/2002. It is noted, however, that applicant has **not filed** a certified copy of the Japanese application (2002-019049) as required by 35 U.S.C. 119(b).

22. Receipt is acknowledged of foreign priority based on an application filed in Japan on 13/2/2001 (2001-035389), submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

23. Claims 1 and 6 would be allowable if the objection(s) and rejection(s) detailed above can be overcome.

Claims 1 and 6 would be allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious a method or system comprising inspection image which includes marks deposited correspondingly to positions of respective light emitting elements, in combination with the rest of the limitations of said claims.

Conclusion

24. The prior art Hiraoka et al (JP401282439A), specifically the inspection and judging method, is made of record and not relied upon **is considered pertinent** to applicant's disclosure.

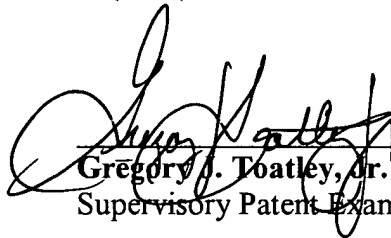
25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Roy M. Punnoose** whose telephone number is **571-272-2427**.

The examiner can normally be reached on 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Gregory J. Toatley, Jr.** can be reached on **571-272-2059**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Roy M. Punnoose
Patent Examiner
Art Unit 2877
January 28, 2005


Gregory J. Toatley, Jr.
Supervisory Patent Examiner